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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,680	11/15/2001	Hideo Hoshuyama	111118	7530
25944 7590 01/24/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER LAROSE, COLIN M	
			ART UNIT 2624	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	
3 MONTHS			01/24/2007	
			DELIVERY MODE PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/987,680	<b>Applicant(s)</b> HOSHUYAMA, HIDEO	
	<b>Examiner</b> Colin M. LaRose	<b>Art Unit</b> 2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-18 and 20 is/are allowed.
- 6) ☒ Claim(s) 19 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Arguments and Amendments*

1. Applicant's arguments and/or amendments dated 1 November 2006, have been entered and made of record.

### *Response to Amendments and Arguments*

2. By way of amendment, Applicant has amended claims 15 to denote that the 2-D look-up table output the corrected signals ... "when the received signals corresponding to the color difference signals are input as arguments." Similar changes appear in claims 18 and 19. This newly-added limitation is sufficient to overcome the previous combination of Lin and Takashima for independent claim 15 and the combination of Takashima and Girod for independent claims 18 and 19. Examiner agrees with Applicant remarks regarding these claims, namely that Takashima inputs a "color hue" as an argument to the look-up table 52, rather than the color difference signals as arguments, as claimed (see Applicant's Remarks, pp. 6-7). Accordingly, the previous rejections of claims 15, 18, and 19 have been withdrawn. [Applicant has also presented separate remarks regarding dependent claim 20. However, Applicant has only argued for the patentability of this claim on the basis of its corresponding independent claim being patentable. Accordingly, Examiner's remarks regarding independent claim 15 are equally applicable to claim 20, which is dependent therefrom.]

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*Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

4. Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 19 defines a computer program product embodying functional descriptive material and stored on a "recording medium." However, the claim does not define a "computer-readable" medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed invention can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" (rather than a "recording medium") or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,721,000 by Lin et al. ("Lin") in view of U.S. Patent 5,181,105 by Udagawa et al. ("Udagawa").

Regarding claim 21, Lin discloses an electronic still camera (figure 1) comprising:

an image-capturing device (sensor 12 + amp 14 + A/D converter 16) that captures an image of a subject and outputs signals under first color coordinates comprising a plurality of color components (signals from sensor 12 are digitized 16 to produce RGB signals);

an image processing device (processor 10) that performs image processing on the signals output from the image-capturing device; and

the image processing device including:

a color coordinate conversion unit that converts the signals output from the image-capturing device into signals under second color coordinates comprising a luminance component and color difference components (figure 1 shows processor converts RGB into YUV), and

a color difference signal correction unit that receives signals corresponding to the color difference components, and outputs corrected signals corresponding to the color difference components (see e.g. figures 2 and 3, where the color difference signals U and V are corrected).

Thus, Lin teaches that the processor 10 is operative to perform color correction/enhancement on the color difference components U and V, as shown in figures 2 and 3.

However, Lin is silent to the corrected signals being output from a "two dimensional look-up table," as claimed.

Udagawa discloses an apparatus (figures 18 and 19) for correcting the color-difference values of image data prior to printing. In particular, Udagawa teaches correcting the color difference signals R-Y and B-Y signals by inputting the signals as arguments to a 2-D look-up table (201 in figure 18; 213 in figure 19) and outputting corrected signals R-Y' and B-Y'. The look-up table modifies the color difference data such that the color difference signals are finely "digitized" (i.e. quantized) in areas of low saturation and roughly "digitized" (i.e. quantized) in areas of high saturation (column 12/25-35; column 13/66 et seq.), thereby reducing the number of bits from 6 to 5. Such a look-up table is illustrated by figure 22A. By quantizing the color difference signals in the manner taught by Udagawa, a photographic image to be printed "can be extremely efficiently digitized" (column 14/2-3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lin by Udagawa to achieve the claimed invention since Lin discloses an electronic still camera that can operate in "video" or "still" mode (column 1/18-19) and that performs color enhancement on color image signals captured by the camera (see element 10, figure 1), and Udagawa shows that it is both advantageous and conventional to correct color difference signals of an image via a 2-D look-up table, as claimed, in order to efficiently quantize the color difference signals prior to a desired printing of the image, as shown in figure 19. Specifically,

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Udagawa teaches that utilizing the look-up tables depicted in figures 18 and 19 provides the advantage of quantizing the color difference signals on the basis of saturation characteristics "so that the natural image can be extremely efficiently digitized" (column 14/2-3).

***Allowable Subject Matter***

7. Claims 15-18 and 20 are allowed for the reasons given above. Claims 19 would be allowable for the same reasons if it is amended to conform to the above requirement under § 101.

***Related Prior Art***

8. Prior art references not relied upon but considered pertinent to applicant's disclosure are listed on the attached PTO-892 form.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000. Any inquiry of a general nature or relating to the status of this application or proceeding can also be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.



Colin M. LaRose  
Group Art Unit 2624  
21 January 2007